



*A Subsidiary of MDU Resources Group, Inc.*

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July 1, 2024

Mr. Steve Kahl, Executive Secretary  
North Dakota Public Service Commission  
600 East Boulevard Avenue, Dept. 408  
Bismarck, ND 58505-0480

**RE: Ten Year Plan**

Dear Mr. Kahl:

Montana-Dakota Utilities Co. herewith submits eight (8) copies of its North Dakota Ten Year Plan in accordance with North Dakota Century Code 49-22-04. Notice of the filing of the ten year plan is given, pursuant to Article 69-06-02-02 of the North Dakota Administrative Code to each agency and officer as designated in Article 69-06-01-05 of the Administrative Code as denoted on the attached Certificate of Service.

Please contact me at (701) 222-7855 or [travis.jacobson@mdu.com](mailto:travis.jacobson@mdu.com) with any questions regarding this filing.

Sincerely,

*/s/ Travis R. Jacobson*

Travis R. Jacobson  
Director of Regulatory Affairs

Enclosure

Cc: Service List

## CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the Notice of Filing Ten Year Plan has been served upon the following via electronic mail delivery on July 1, 2024.

1. ND Aeronautics Commission
2. ND Attorney General
3. ND Department of Agriculture
4. & 5. ND Health & Human Services
6. ND Department of Labor and Human Rights
7. ND Department of Career and Technical Education
8. ND Economic Development & Finance
9. ND Energy Infrastructure and Impact Office
10. ND Game and Fish Department
11. ND Industrial Commission
12. ND Office of the Governor
13. ND Department of Transportation
14. State Historical Society of North Dakota
15. ND Indian Affairs Commission
16. Job Service of North Dakota
17. ND Department of Trust Lands
18. ND Parks and Recreation Department
19. Natural Resources Conservation Service
20. ND Water Resources
21. United States Department of Defense
22. US Fish and Wildlife Service
23. US Army Corps of Engineers
24. Federal Aviation Administration
25. Burleigh County Auditor  
Morton County Auditor
26. ND Transmission Authority
27. ND Pipeline Authority
28. ND Department of Environmental Quality
29. ND Geological Survey
30. ND Forest Service
31. Federal Bureau of Land Management
32. Military Aviation & Installation Assurance Siting Clearinghouse
33. Twentieth Air Force Ninety-First Missile Wing
34. Minot Air Force Base
35. Grand Forks Air Force Base

Dated this 1st day of July 2024.

/s/ Terese M. Birnbaum  
Regulatory Analyst  
Montana-Dakota Utilities Co.

**MONTANA-DAKOTA UTILITIES CO.**  
**TEN YEAR PLAN**  
**FOR NORTH DAKOTA ELECTRIC PROPERTIES**

For Planning Years July 1, 2024 through June 30, 2034

Submitted to  
NORTH DAKOTA PUBLIC SERVICE COMMISSION  
July 1, 2024



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**UTILITIES CO.**

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TEN YEAR PLAN  
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For Planning Years July 1, 2024 through June 30, 2034

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July 1, 2024

**MONTANA-DAKOTA UTILITIES CO.**

400 North 4th Street  
Bismarck, North Dakota 58501

## INTRODUCTION

Enclosed are data comprising the Montana-Dakota Utilities Co. (Montana-Dakota) "Ten Year Plan" for North Dakota Electric Properties filed in compliance with NDCC §49-22-04 and NDAC §69-06-02-01 and 02.

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## SCHEDULE A

### EXISTING ENERGY CONVERSION FACILITIES

The existing energy conversion facilities subject to this filing and located in North Dakota are the 427 MW Coyote Station near Beulah in which Montana-Dakota has a 25 percent ownership interest, the 88 MW Heskett Station in Mandan, which is wholly owned by Montana-Dakota, the 5.3 MW waste heat recovery unit located near Glen Ullin, the 19.5 MW Cedar Hills wind project located near Rhame and the 155.5 MW Thunder Spirit wind project located near Hettinger. Otter Tail Power Company of Fergus Falls, Minnesota operates the Coyote Station and reports all information required by Schedule A.

## SCHEDULE B

### ENERGY CONVERSION FACILITIES UNDER CONSTRUCTION

Montana-Dakota is currently in the process of building a simple cycle combustion turbine generating resource (88 MW), which will help meet future energy and demand requirements from its customers in an economic and reliable fashion. Heskett 4 will be located beside the current Heskett 3 simple cycle combustion turbine which gives Montana-Dakota ability to utilize existing air permit emissions, land, natural gas pipeline, and interconnection facilities. The site is designed to convert Heskett 3 and 4 into a combined cycle facility with the addition of heat recovery boilers and a steam turbine generator in the future if needed. Heskett 4 is expected to be brought online in 2024.

## SCHEDULE C

### PROPOSED ENERGY CONVERSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS

None

## SCHEDULE D

### PROPOSED ENERGY CONVERSION FACILITIES DURING THE NEXT TEN-YEAR TIME PERIOD

Montana-Dakota routinely studies additional resource options to meet its customer needs. These options are addressed in Montana-Dakota's Integrated Resource Plan (2021 IRP) filed with the Commission on July 1, 2021, and designated as Case No. PU-21-307.

Montana-Dakota is planning to file its 2024 IRP with the Commission in July of 2024.

## SCHEDULE E

### EXISTING TRANSMISSION FACILITIES (ELECTRIC)

Exhibit A is a system map of North Dakota showing the location of existing transmission facilities.

## SCHEDULE G

### PROPOSED TRANSMISSION FACILITIES ON WHICH CONSTRUCTION IS INTENDED WITHIN THE ENSUING FIVE YEARS (ELECTRIC)

Montana-Dakota, as part of the Midcontinent Independent System Operator (MISO) Interconnection Process, will make additions to the 230 kV portion of the Wishek Substation to support interconnecting the upcoming Badger Wind Project scheduled for operation in 2025. Additional substation upgrades are required at the Mandan, Napoleon, and Merricourt substations. Reconductoring the Wishek to Merricourt 230 kV line is also required.

Montana-Dakota as part of the MISO Long-Range Transmission Planning (LRTP) process, plans to jointly construct, with Otter Tail Power Company, a 345 kV double circuit capable line from Montana-Dakota's Ellendale 345 kV Substation to Otter Tail Power Company's Jamestown Substation with only one circuit being added as part of the LRTP Tranche 1 projects. Additional work will be done at the Ellendale 345 kV Substation to terminate the new transmission line into the substation. The project is expected to be in-service the end of 2028.

## SCHEDULE I

### PROPOSED TRANSMISSION FACILITIES DURING THE NEXT TEN YEAR TIME PERIOD (ELECTRIC)

None

## SCHEDULE J

### REGIONAL COORDINATION

Montana-Dakota has been coordinating the planning, construction, and operation of electric facilities with other utilities and agencies serving North Dakota since 1945. Montana-Dakota has interconnection agreements with Basin Electric Power Cooperative (Basin Electric), Western Area Power Administration (WAPA), Otter Tail Power Company, NorthWestern Energy Public Service Corporation, and Minnkota Power Cooperative, Inc. These agreements provide for the interconnection of Montana-Dakota's bulk transmission facilities with the WAPA transmission network and MISO bulk transmission facilities.

Montana-Dakota is a transmission owning member of MISO. MISO is a FERC-authorized Regional Transmission Organization (RTO). MISO commenced tariff administration for the operational control of the transmission systems of its members in February 2002. MISO commenced its energy market on April 1, 2005. The MISO Ancillary Services Market started on January 6, 2009, at which time Montana-Dakota became a Local Balancing Authority within MISO. Montana-Dakota actively participates in the planning processes performed by MISO, which has the obligation to coordinate the planning of transmission facilities. Two of the planning processes mandated by FERC are generator interconnection and delivery service. The third process is related to expansion planning through the MISO Transmission Expansion Plan. As part of the market operation, Montana-Dakota's generating units are dispatched by MISO.

Montana-Dakota and WAPA historically had an agreement that provided for mutual wheeling and coordinated construction of transmission facilities. This agreement expired on January 1, 2016. WAPA and Basin Electric joined the Southwest Power Pool (SPP) in October 2015 and with the expiration of the WAPA Transmission Service Agreement (TSA) on January 1, 2016, Montana-Dakota began taking Network Integrated Transmission Service (NITS) from SPP to serve approximately one-half of its customer load in western North Dakota and eastern Montana.

Montana-Dakota has offset NITS charges by receiving credits for its transmission facilities that are used to facilitate SPP transmission service.

Montana-Dakota, Otter Tail Power Company, and NorthWestern Energy Public Service Corporation own the 475 MW Big Stone generating station near Big Stone City, South Dakota, and associated bulk transmission facilities. Montana-Dakota owns 22.7 percent of the Big Stone Plant. In addition, Montana-Dakota is a participant in another joint venture with Minnkota Power Cooperative, Inc. (agent for Northern Municipal Power Agency), Otter Tail Power Company, and NorthWestern Energy Public Service Corporation. This is the 427 MW Coyote generating station near Beulah, North Dakota, and associated bulk transmission facilities. Montana-Dakota currently owns 25 percent of the Coyote Station. These cooperative efforts permit Montana-Dakota to realize economic benefits from ownership in a large generating station and to provide the electrical generation required of it and its partners using fewer facilities.

Montana-Dakota is also a member of the Midwest Reliability Organization (MRO). The MRO is one of six regional entities in North America operating under authority from regulators in the United States and Canada through a delegation agreement with the North American Electric Reliability Corporation (NERC). The primary focus of the MRO is developing and ensuring compliance with regional and international standards and performing assessments of the grid's ability to meet the demands for electricity.

## SCHEDULE K

### ENVIRONMENTAL INFORMATION

Montana-Dakota Utilities Co.'s Environmental Policy states that:

*The Company will operate efficiently to meet the needs of the present without compromising the ability of future generations to meet their own needs. Our environmental goals are:*

- *To minimize waste and maximize resources;*
- *To be a good steward of the environment while providing high quality and reasonably priced products and services; and*
- *To comply with or surpass all applicable environmental laws, regulations*

*and permit requirements.*

Montana-Dakota maintains good relations with local, state, and federal agencies involved with environmental protection and land use planning in its service area.

Transmission and energy conversion facilities will be designed and located in such a manner as to maximize operational efficiency and economic benefits and to minimize impacts on agriculture, extractable resources, health and safety, plant and animal life, communications, and the visual effect on the surrounding area. Transmission and energy conversion facilities will be sited in compliance with the federal, state, and local laws and with the Public Service Commission's rules and regulations.

Montana-Dakota strives to maintain compliance and operate in an environmentally proactive manner, while taking into consideration the cost to customers. Montana-Dakota actively provides comments to federal and state legislative and regulatory activity related to environmental issues, including air emissions, greenhouse gases (GHG), waste disposal, and water discharges. The Company has also established memberships in relevant trade organizations to assist in monitoring the potential impact of proposed legislation and regulation to the Company's operations.

## SCHEDULE L

### PROJECTED DEMAND FOR SERVICE

The load data reported in this plan are the result of Montana-Dakota's *2024-2043 Electric Load Forecast* dated December 31, 2023.

#### 1. Projected Peak Load for 2024-2034

The demand forecast was developed using an econometric model whose methodology is documented in detail in *2024-2043 Electric Load Forecast*.

The summer peak is the highest hourly demand value for the summer months in the given year. The winter peak is the highest hourly demand value for the winter season occurring at the end of the given year or the beginning of the following calendar year. The projected demands shown in MW below represent the load at the customer level plus the demand due to system losses.

System losses include energy losses on the transmission and distribution systems and energy that is unaccounted for such as power theft or stray currents. The summer peak demand given is net of energy efficiency and prior to any reduction in load due to demand response.

a. Montana-Dakota Integrated System

PROJECTED PEAK DEMAND (MW)

| YEAR   | 2024  | 2025  | 2026  | 2027  | 2028  | 2029  | 2030  | 2031  | 2032  | 2033  | 2034  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SUMMER | 572.8 | 576.3 | 580   | 583.9 | 587.5 | 591.3 | 595   | 599.3 | 603.5 | 607.8 | 612.1 |
| WINTER | 569.2 | 571.4 | 573.8 | 576.5 | 578.8 | 581.5 | 583.9 | 587.3 | 590.7 | 594.1 | 597.6 |

GROWTH RATE (%)

| YEAR   | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | --   | 0.6  | 0.6  | 0.7  | 0.6  | 0.6  | 0.6  | 0.7  | 0.7  | 0.7  | 0.7  |
| WINTER | --   | 0.4  | 0.4  | 0.5  | 0.4  | 0.5  | 0.4  | 0.6  | 0.6  | 0.6  | 0.6  |

Historically, for the period 2018-2023 the summer peak demand increased at an average rate of 0.6 percent per year while the winter peak demand increased at an average rate of 0.7 percent per year. The projected average growth rates for the period 2024-2034 are 0.7 percent for the summer peak and 0.5 percent for the winter peak.

b. North Dakota

PROJECTED PEAK DEMAND (MW)

| YEAR   | 2024  | 2025  | 2026  | 2027  | 2028  | 2029  | 2030  | 2031  | 2032  | 2033  | 2034  |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| SUMMER | 404.7 | 407.2 | 409.9 | 412.8 | 415.5 | 418.3 | 421.1 | 424.3 | 427.6 | 430.8 | 434.1 |
| WINTER | 402.2 | 403.8 | 405.5 | 407.6 | 409.4 | 411.4 | 413.2 | 415.9 | 418.5 | 421.2 | 423.9 |

### GROWTH RATE (%)

| YEAR   | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| SUMMER | --   | 0.6  | 0.7  | 0.7  | 0.7  | 0.7  | 0.7  | 0.8  | 0.8  | 0.7  | 0.8  |
| WINTER | --   | 0.4  | 0.4  | 0.5  | 0.4  | 0.5  | 0.4  | 0.7  | 0.6  | 0.6  | 0.6  |

## 2. Projected Energy for 2024-2034

The projected annual energy requirements, shown in gigawatt-hours (GWh), for Montana-Dakota's Integrated System are as follows:

| Year | Annual Energy (GWh) | Year | Annual Energy (GWh) |
|------|---------------------|------|---------------------|
| 2024 | 3,251.0             | 2030 | 3,333.0             |
| 2025 | 3,262.9             | 2031 | 3,351.6             |
| 2026 | 3,276.4             | 2032 | 3,370.7             |
| 2027 | 3,291.3             | 2033 | 3,389.8             |
| 2028 | 3,304.3             | 2034 | 3,408.9             |
| 2029 | 3,319.4             |      |                     |

Historically, for the period 2018-2023, Montana-Dakota experienced an average annual decrease of 0.3 percent for energy consumption. The projected average growth rate for the period 2024-2034 is 0.5 percent.

## 3. Load Centers

Montana-Dakota's load centers for the Integrated System, defined as areas with 10 MW or more of load in a limited geographical area, are, in North Dakota, Bismarck-Mandan, Dickinson, Stanley, Tioga, Watford City, and Williston and in Montana, Baker, Glendive, Sidney, and Miles City.

Montana-Dakota created a new Rate 45 - High Density Contracted Demand Response tariff in North Dakota and South Dakota to help attract large data center loads to its electric service territory. These large data center load under Rate 45 need to be a new customer with greater than 10 MWs of load and are subject to a 5-year electric service agreement negotiated with the company and approved by the Public Service Commission of North Dakota or Public Utility Commission of South Dakota. Montana-Dakota has one load center in North Dakota for Rate 45 customers at Ellendale.

Load forecasts for Rate 45 customers are not included in the overall *2024-2043 Electric Load Forecast* because these special loads are not serviced by Montana-Dakota's rate-based generation fleet and rely on MISO market purchases and/or specific supply arrangements to meet the data center customer load requirements.

## Exhibit A

North Dakota Electric System Map

